

PARAM SCIENCE MAGAZINE

“
Food is not just fuel, it's information.
It talks to your DNA and tells it what to do.”
–Dr. Mark Hyman
”

MARCH SCIENCE DAYS

Self-Injury Awareness Day : 1st March
World Hearing Day : 3rd March
Pi Day : 14th March
National Vaccination Day: 16th March
World Meteorological Day: 23rd March
World Tuberculosis Day: 24th March

BIRTHDAYS!

Edward Condon : 2nd March 1902
Alexander Graham Bell : 03rd March 1847
Albert Einstein: 14th March 1879
Kalpana Chawla: 17 March 1962
Emmy Noether: 23rd March 1882
Vasant R Gowariker: 25th March 1933



World Food Safety Day **7 June**



Let's explore food's enchanting and nutritious aspects, with its vibrant colours, irresistible taste, enticing aromas, and delicious flavours.

FOOD MATTERS

FOOD NOURISHES AND ENERGIZES

MACRO NUTRIENTS



Proteins



Fats



Carbohydrates

MICRO NUTRIENTS

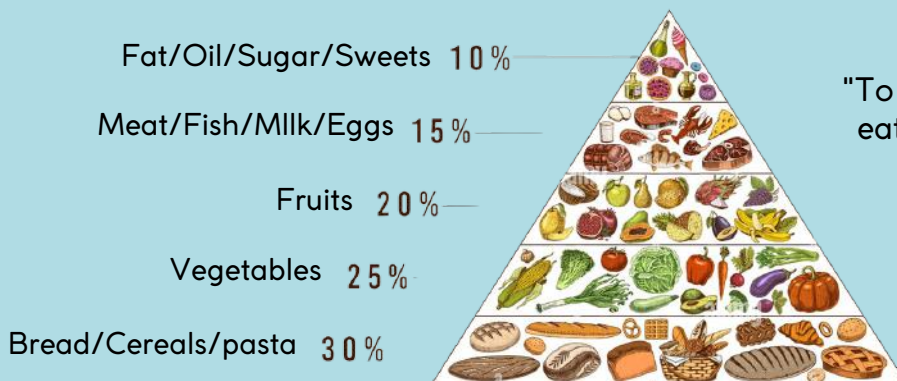


Vitamins



Minerals

FOOD PYRAMID



“
 “To eat is a necessity, but to eat intelligently is an art.”
 –La Rochefoucauld
 ”

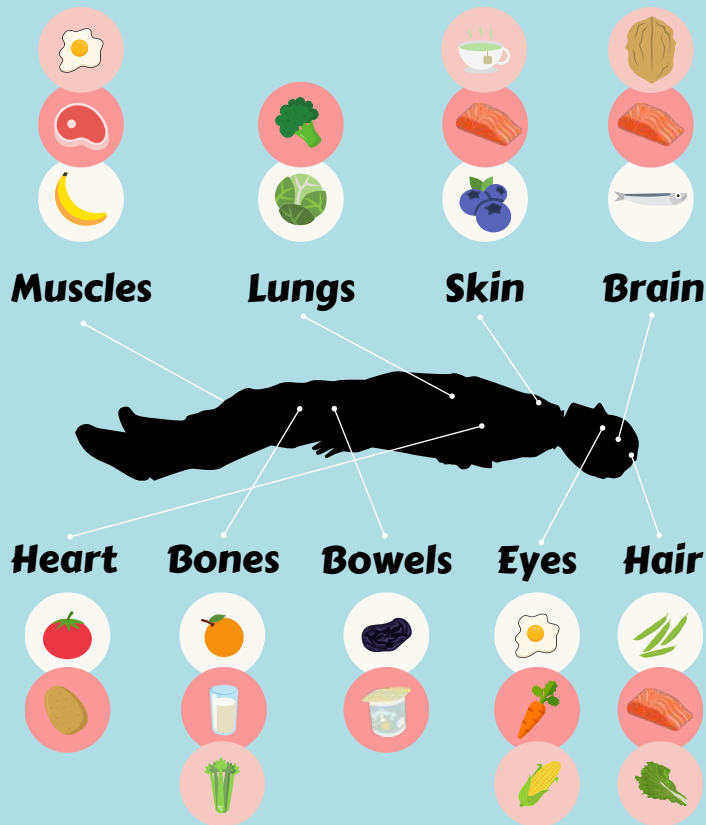
FOOD AND MOOD

NOURISHING THE BODY MIND AND SOUL



BEST FOODS FOR YOUR BODY

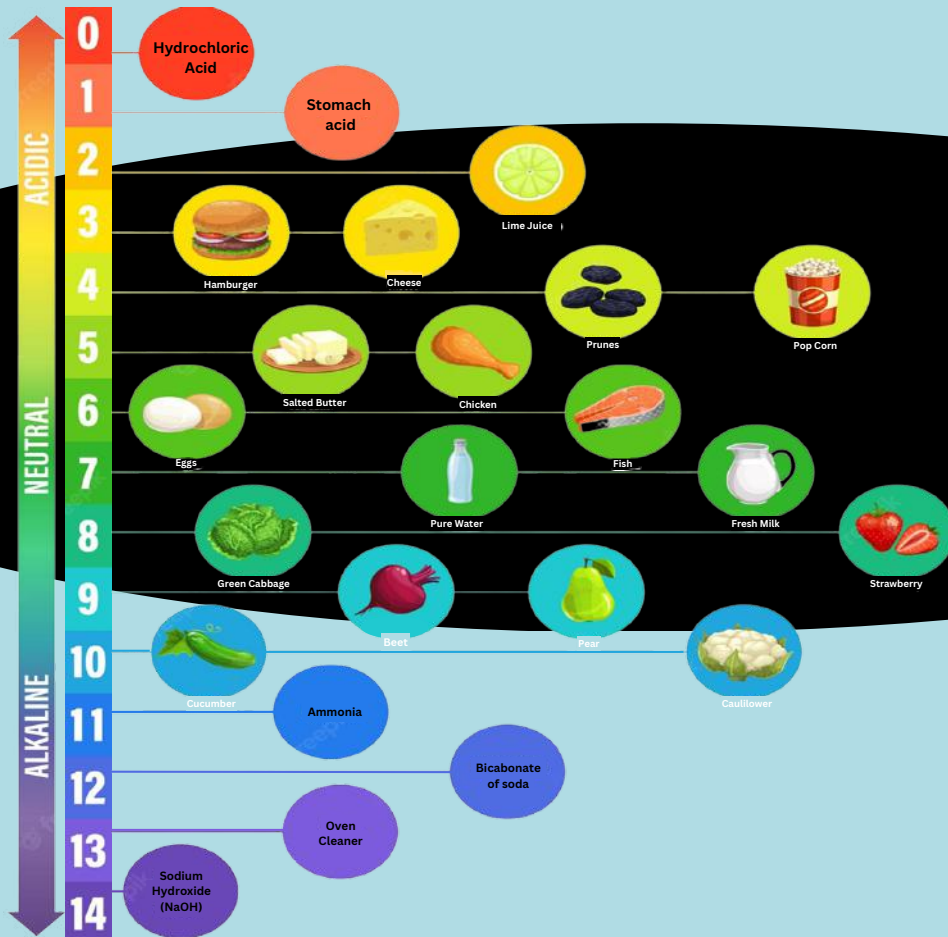
Food is the language of the body, and mood is its voice.



The food we consume plays a significant role in shaping our body, mind, and overall health, and it can influence our mood, energy levels, and longevity.

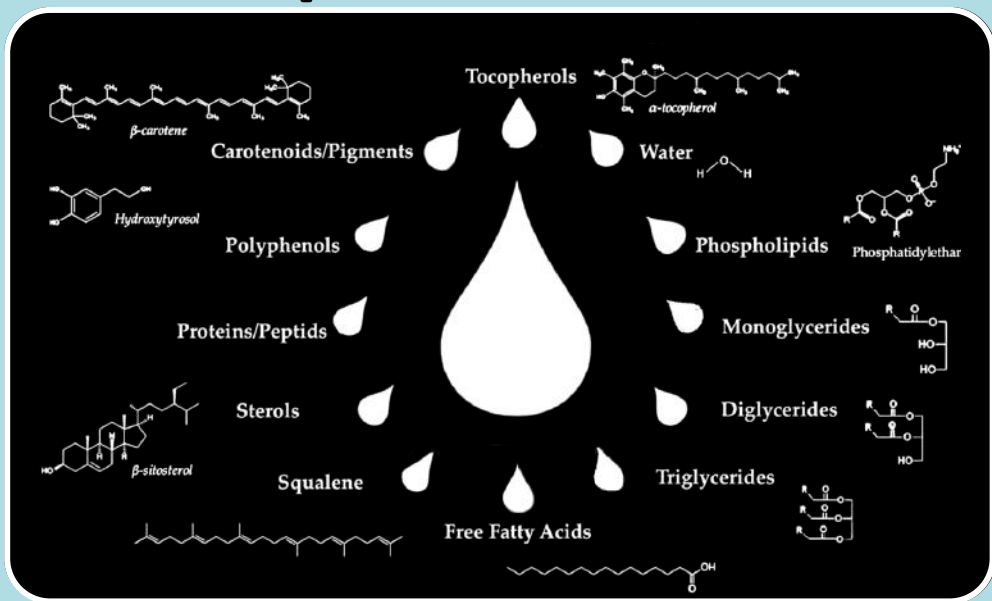
FOOD HAS CHEMISTRY

UNPACKING THE SCIENCE BEHIND WHAT WE EAT



A PH scale is a powerful tool for understanding the acidity or alkalinity of food and its impact on taste, texture, and nutritional value.

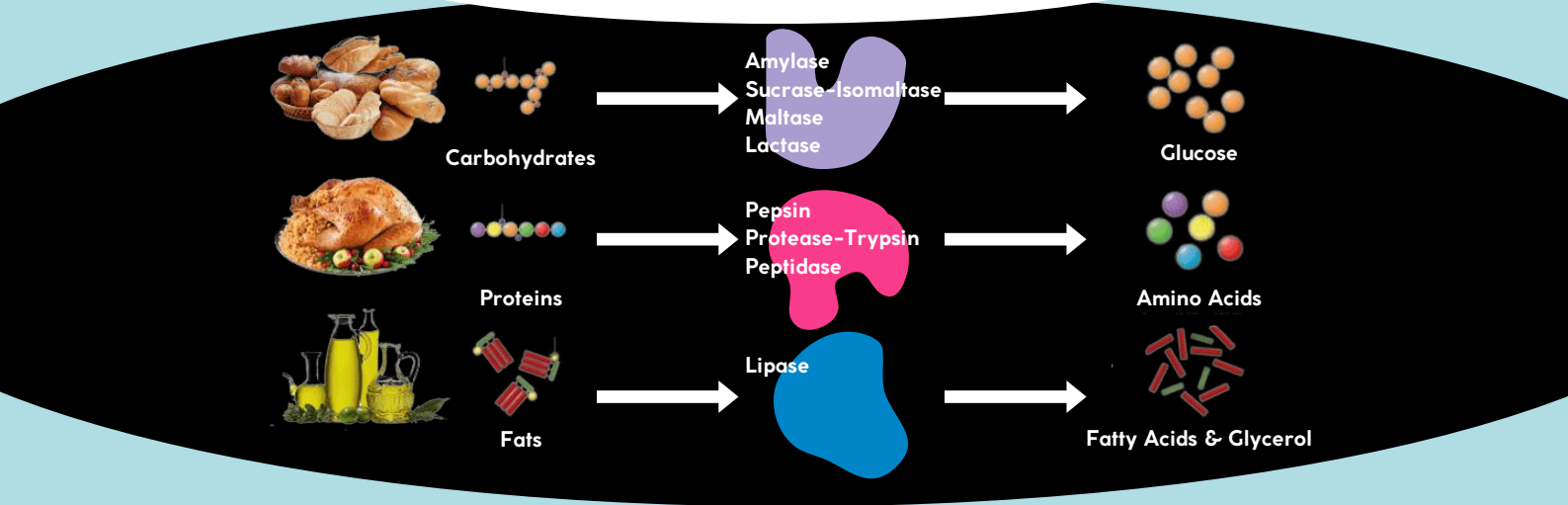
Components Of Oil



FOOD HAS CHEMISTRY

UNPACKING THE SCIENCE BEHIND WHAT WE EAT

Enzymes Breaking down food

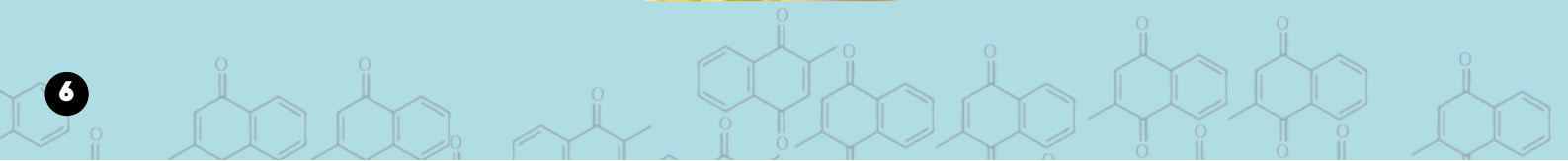


Intestinal Juices

- **Intestinal glands secrete intestinal juice**
- **Intestinal Juice:**
 - o Digestion of starch:
 - Maltose $\xrightarrow{\text{maltase}}$ Glucose
 - Lactose $\xrightarrow{\text{lactase}}$ Glucose+Galactose
 - Sucrase $\xrightarrow{\text{sucrase}}$ Glucose + Fructose
 - o Digestion of small protein molecules
 - Peptones $\xrightarrow{\text{erepsin}}$ amino acids
 - Trypsinogen $\xrightarrow{\text{enterokinase}}$ trypsin
 - o Digestion of fats
 - Fats $\xrightarrow{\text{lipase}}$ fatty acids + glycerol

“Things sweet to taste prove in digestion sour”
 -William Shakespeare

FOOD HAS TEXTURE






FOOD HAS COLOUR

EAT A RAINBOW!

Benefits of fruits and vegetables by colour



 Immune support	 Beauty	 Cancer prevention	 Heart health	 Longevity	 Detoxification
Immune system Healthy colon Prevents ulcers Lowers cholesterol Healthy heart	Healthy skin Lowers cholesterol Healthy joints/tissues Supports eyesight Healthy heart	Immune system Skin protection Supports eyesight Antioxidant Healthy heart	Skin protection Lowers cholesterol Prevents cancer Cell renewal Healthy heart	Anti aging Lowers cholesterol Helps memory Healthy urinary system Healthy heart	Immune system Healthy bones Supports eyesight Improves digestion Prevents cancer

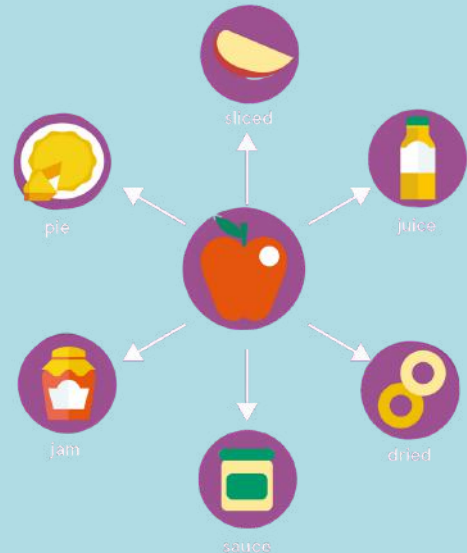


FOOD PROCESSING

TYPES OF PROCESSING



Industrial food processing



Food processing at home



Impact of food processing



INCREASING AVAILABILITY



ALTERING ANTIOXIDANT LEVELS



MAKING IT CONVENIENT



CHANGING FLAVOUR & TEXTURE



ALLOWING FORTIFICATION & ENRICHMENT



DECREASING PRICE



TAILORING TO SPECIFIC NEEDS



ENSURING FOOD SAFETY



INCREASING DIVERSITY



REDUCING FOOD WASTE



PRESERVING NUTRITIONAL QUALITY

Unexpected ingredients



NITROGEN IN PRE-WASHED SALADS
slows spoilage until the bag is opened, extending shelf-life without affecting the nutritional value



PALM OIL IN BREADS
solid at room temperature, easy to bake with, and inexpensive



ADDITIVES
used as seasoning, like sodium acetate or to increase shelf-life and improve food safety, like potassium lactate



WHEAT FLOUR IN NON-WHEAT PRODUCTS
used as thickener and stabiliser



choose a healthier option if you can: wholegrain, fresh and frozen fruit & veg or tinned fish in water not oil



check the labels to keep salt, fat & sugar in moderation



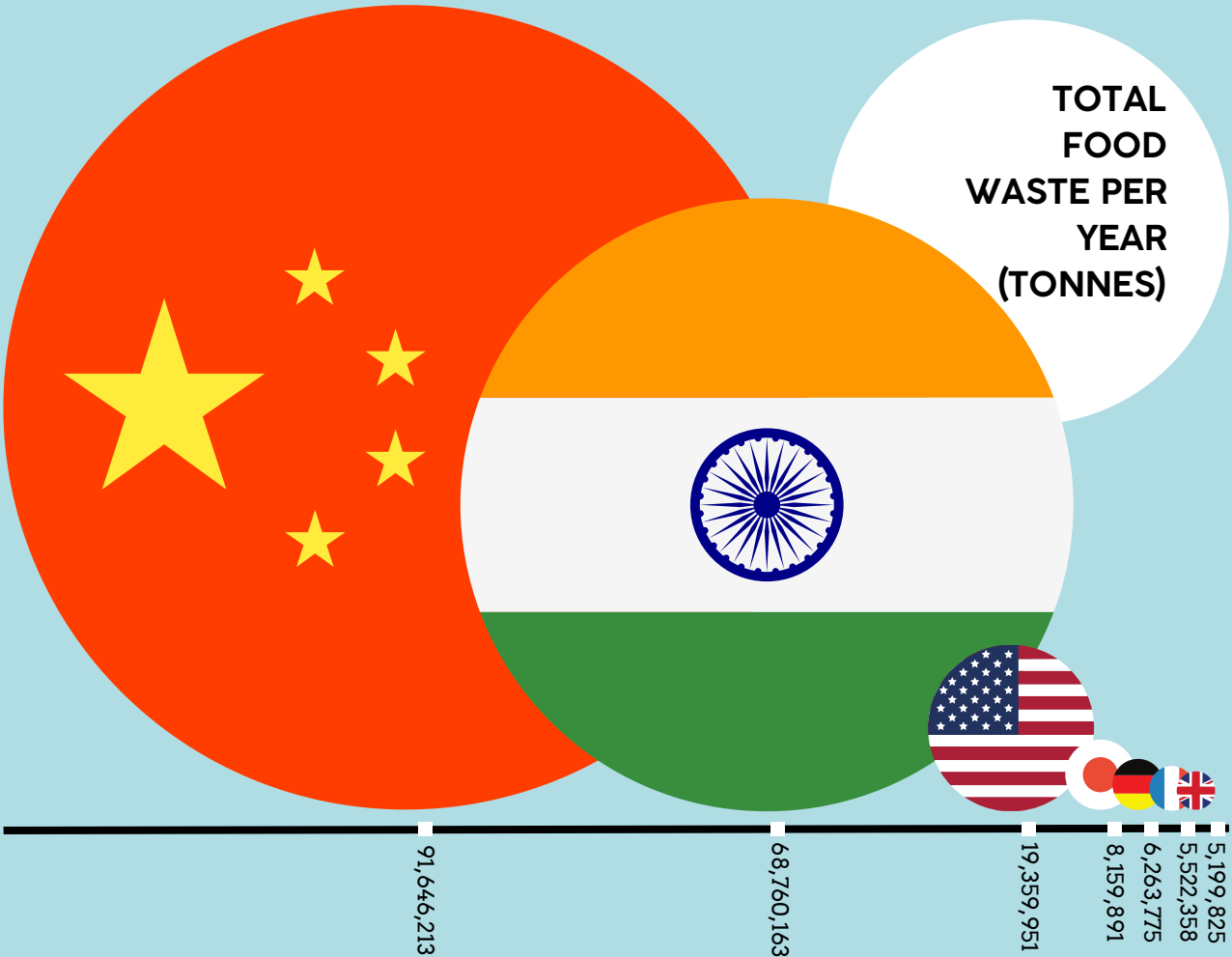
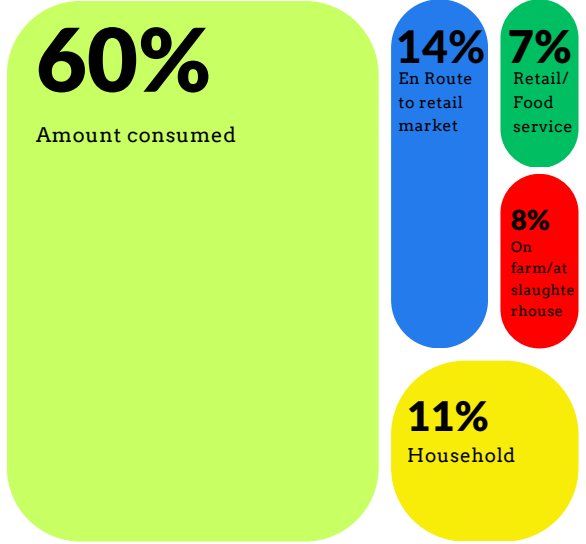
enjoy treats occasionally, watch portion sizes and be physically active



home cooking is also processing, be mindful of the ingredients you use

FOOD WASTE

WHERE FOOD IS LOST AND WASTED (AS A PERCENTAGE OF GLOBAL FOOD PRODUCTION)



CULTURAL SIGNIFICANCE OF FOOD

Food is not simply meant for body nourishment, but was the basic part of a cosmic moral cycle



Karnataka lip smacking delicious dishes

A vegetarian Andhra meal served on important occasions



Kerala Sadhya thali



The Jharkhand Thali is elaborate



Flavourful, Spicy, Aromatic, Mouth-watering Punjabi Tadka

Bhojpuri cuisine can surprise you with its multitude of flavors



Food Lovers Gujarati cuisine



Rajasthani thali is the quintessential Indian thali

TASTE OF INDIA

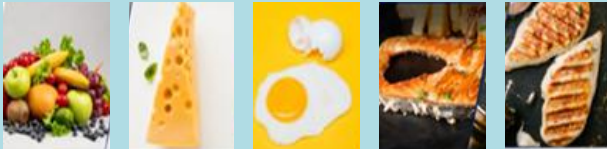
Aromas of food trigger neurological responses, stimulating saliva production and activating digestion, which prepares the body for nutrient absorption.



FOOD COMBINATIONS

INCOMPATIBLE FOOD COMBINATIONS

SAMYOGA VIRUDDHA AHARA



COMPATIBLE FOOD COMBINATIONS



AYURVEDA IN FOOD



MUST HAVE AYURVEDIC FOOD LIST BASED ON DIFFERENT DOSAS

PITTA DOSA

- Black Pepper
- Cumin
- Chickpeas
- Lentils
- Milk
- Ghee
- Oranges
- Bananas

VATA DOSA

- Butter
- Yoghurt
- Beets
- Onions
- Mangoes
- Strawberries
- Mung Beans
- Lentils

KAPHA DOSA

- Goat milk
- Soy milk
- Green Leafy Vegetables
- Okra
- Turmeric
- Ginger
- Pomegranates
- Pears

SATAVIC, RAJASIC & TAMASIC FOOD

Ahara" (diet) and "Anna" (food) as a means to good life, health and wellness.



Juicy, naturally tasteful, mild, and beneficial, food which promote longevity

Sattvic

आयुःसत्त्वबलारोग्यसुखप्रीतिविवर्धना ।
रस्याः स्निग्धाः स्थिरा हृद्या आहाराः सात्त्विकप्रियाः ॥



Foods that are bitter, too sour, salty, very hot, pungent, dry, and full of chilies, and produce pain, grief, and disease.

Rajasic

कटुम्ललवणात्युष्णतीक्ष्णरूक्षविदाहिनः ।
आहारा राजसस्येष्टा दुःखशोकामयप्रदाः ॥



Foods that are overcooked, stale, putrid, polluted, and impure are dear to persons in the mode of ignorance.

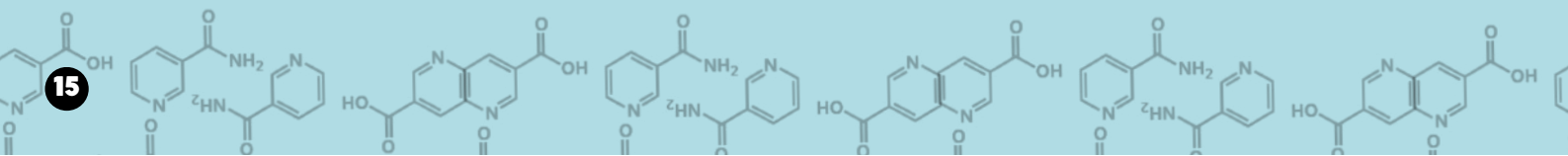
Tamasic

पातयामं गतरसं पूति पर्युषितं च यत् ।
उच्छिष्टमपि चामेधं भोजनं तामसप्रियम् ॥

A PINCH OF MAGIC: EXOTIC SPICES



Spices enhance taste and offer health benefits like antibacterial and anti-inflammatory effects, improving heart health and digestion.



LEAVE NO ONE BEHIND

Mexican Cuisine



A collage of circular images representing Mexican cuisine. It includes the Mexican national flag, a burrito icon, a plate of tamales, a glass of orange juice with cherries, the Thai flag, a bubble tea icon, a plate of Thai street food, and two glasses of bubble tea.

Italian Cuisine



A collage of circular images representing Italian cuisine. It includes the Italian national flag, a fork with spaghetti icon, a plate of Italian food, a cup of chocolate sauce, the Japanese flag, a chopsticks icon, a plate of sushi, and a bowl of green soup.

Japanese Cuisine

TOP DISHES

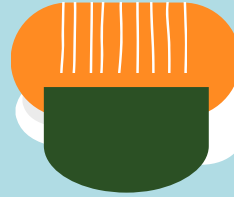
CHOCOLATE

chocolate is confectionary made from roasted and ground cacao beans, often mixed with sugar and milk



SUSHI

Sushi is a Japanese dish made of small balls of vinegar flavored rice topped with vegetables, fish, and other ingredients



MASSAMAN

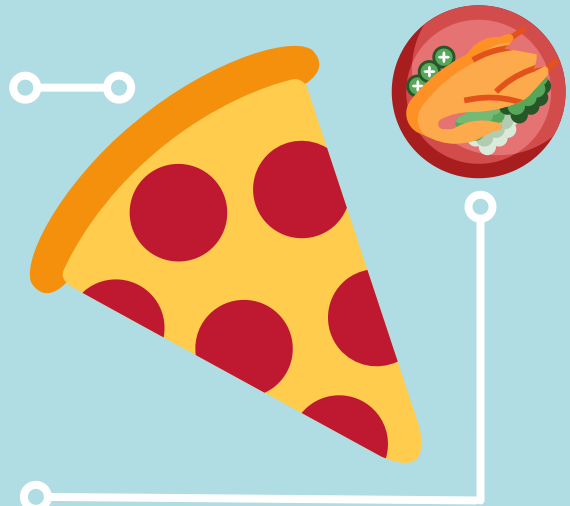
CURRY

massaman curry is a mild, creamy thai dish with potatoes, peanuts and aromatic spices



PIZZA

thin crust pizza from naples with tomato, basil and mozzarella; a classic italian staple

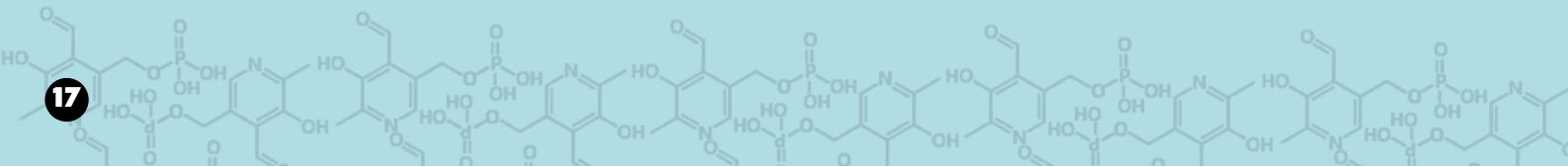


PEKING

DUCK

crispy skinned roasted duck served with pancakes, scallions, cucumber and sweet bean sauce

TOP 5 DISHES IN THE WORLD



FOOD EXHIBIT

PLAN YOUR DIET



Amongst a variety of foods, pick and create your meal. Immediately receive the average cost, nutritional profile, Guna(Satavik, Rajasik, Tamasik) and emotional response to the meal.

Try to optimise your diet but realise that you cannot have everything.

Each plastic model shall contain a sensor which detects whether you have picked up the food or not.

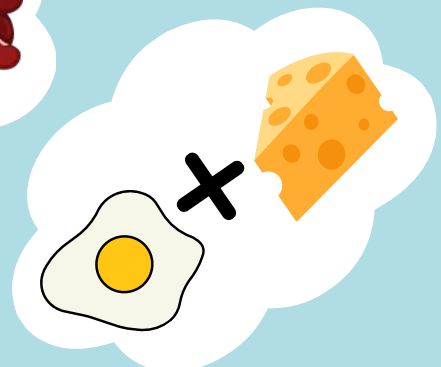
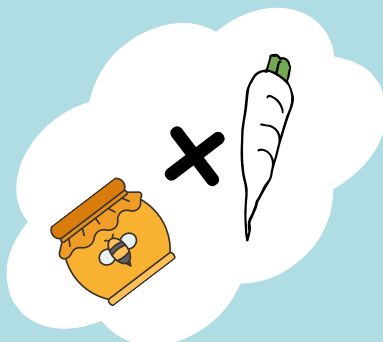
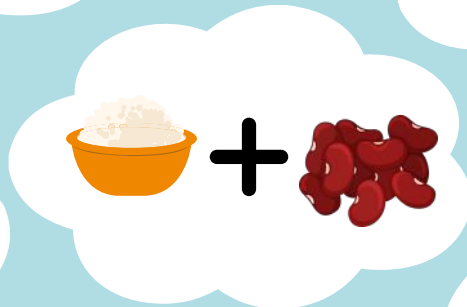
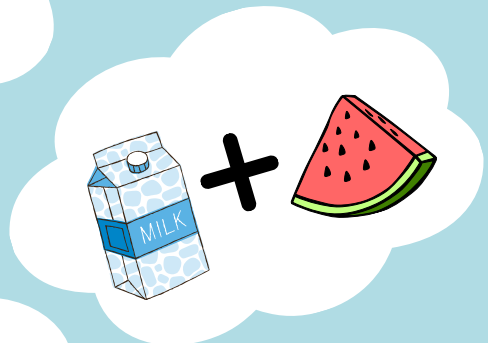
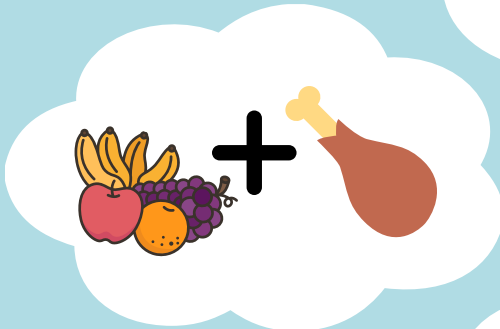
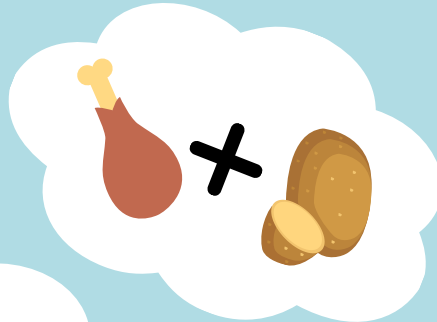
Rasashala (Ancient Alchemy Lab)

Come set up intricate labs and mix safe rasas to create amazing concoctions.

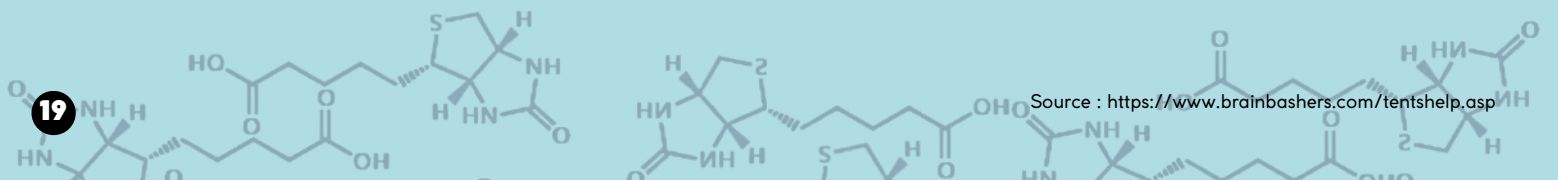


MONTHLY CHALLENGE

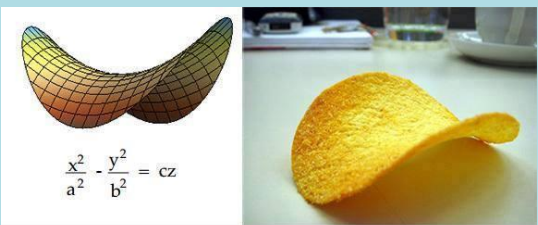
Which food combination are good for your health and which are not, send in your answers to content@paraminnovation.org for COOL PRIZES



Name the different vitamin compounds that are on the footer of each page and send in your answers to content@paraminnovation.org

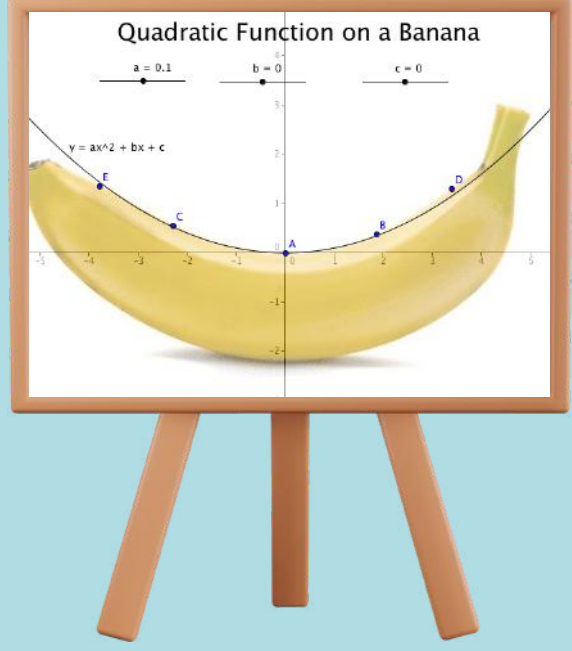


EQUATION OF DELICIOUSNESS



Pringles are examples of hyperbolic paraboloids.

The shape of Pringles potato chips (hyperbolic paraboloid) was designed using a supercomputer to be aerodynamically stable so they don't fly off the manufacturing line



Squidgy to crispy ratio

$$\frac{(r-2)^2}{4(r-1)}$$

Squidgy
Small hole = Extra squidgy

Crispy
Large hole = Extra crisp

THE ULTIMATE RING DONUT

Conclusion
ULTIMATE DOUGHNUT
78% squidgy
22% crisp

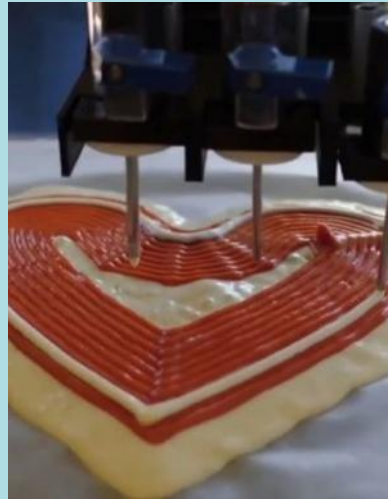
Donut hole diameter: 10mm
Donut hole diameter: 10mm

NEWS & LATEST RESEARCH

3D Printed Food



3D Printed Chocolate



3D Printed Pizza



3D Printed Snack

Space Foods




Ready-to-eat (RTE) space food introduced in 2021











Japanese space food









DATA

food trends 2010 - 2019



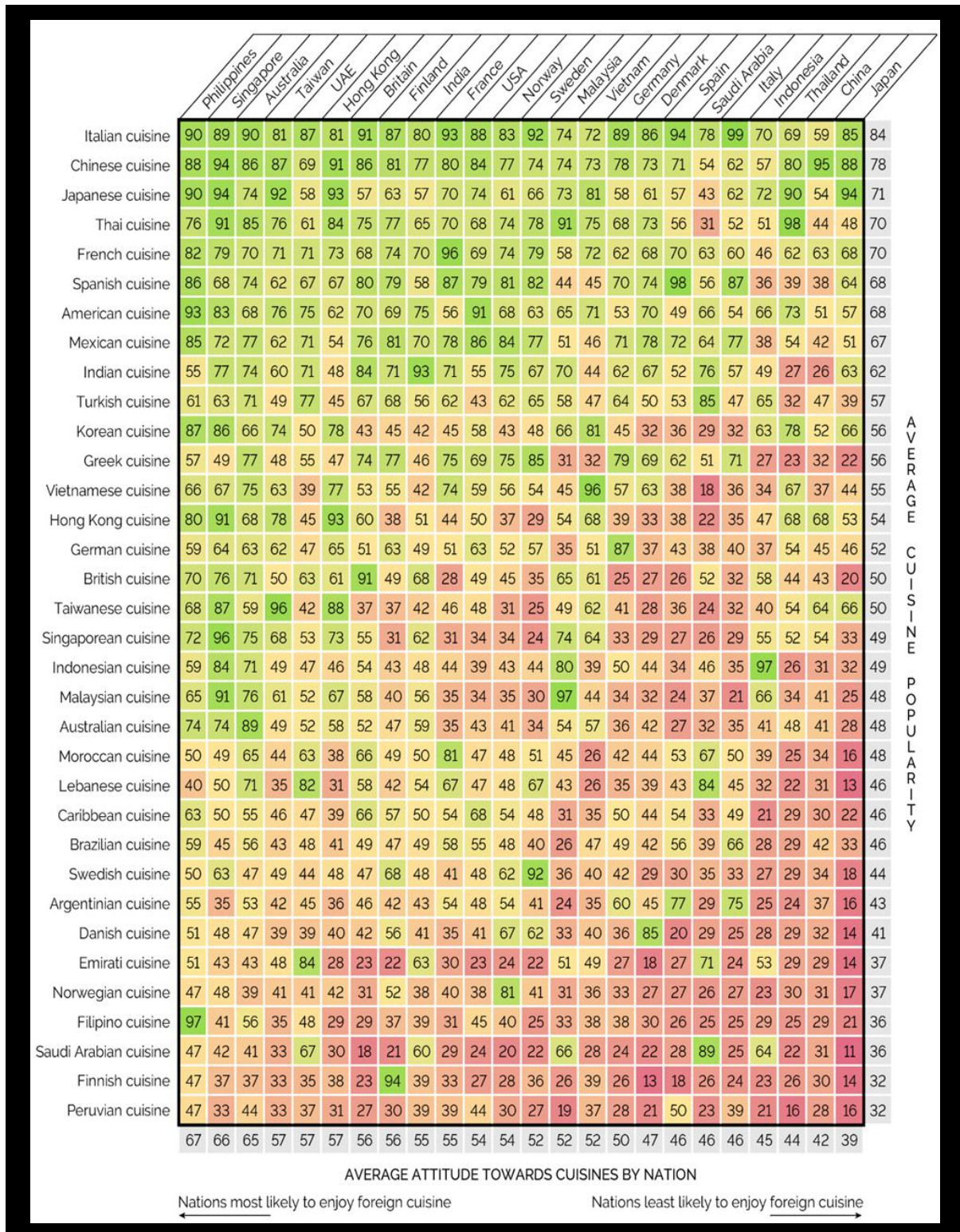
cured meats-soba noodle-velvet cake 	2010
mini cupcake-whoopie pie 	2011
microbrew-shaved ice 	2012
taco stand-caramel apple-candy bar 	2013
blue crab-maki roll-lox-ramen 	2014
burrito bowl-sampler platter-fresh juice 	2015
mochi ice cream-sweet crepe 	2016
chicken gyro-loaded fries-poke bowl 	2017
sushi burrito-cake donut rolled ice cream-charcuterie 	2018
oat mil-acai bowl-street corn CBD-impossible burger 	2019

What will a burger look like in 2030

Today	2030
 <p>0.2 miles in a car is what eating bread once a day equates to in CO2e</p>	 <p>Sourdough bun is most sustainable as no chemical fertilisers are used</p>
 <p>40% wasted Almost half of the salad we buy in the UK is thrown out</p>	 <p>Long-lasting salad Reducing water use by 20% results in leaves with a longer shelf life and smart packaging reminds you to eat them</p>
 <p>1451 liters of water is needed to produce 1kg of beef</p>	 <p>Plant- or insect-based burger Insects require less space, water and 12-25 x less feed</p>

DATA

Italian, Chinese and Japanese cuisines are the worlds most popular



NOURISHMENT WITH FRUITS & VEGGIES

PART BY PART



FOOD FESTIVALS AROUND THE GLOBE

Top Food Festivals Around the Globe

- **Hokitika Wild Food Festival**, New Zealand
- **The Taste**, Los Angeles
- **Food And Wine Festival**, Melbourne, Australia.
- **Gilroy Garlic Festival**
- **Dumpling Festival**



Salon Du
Chocolat, France



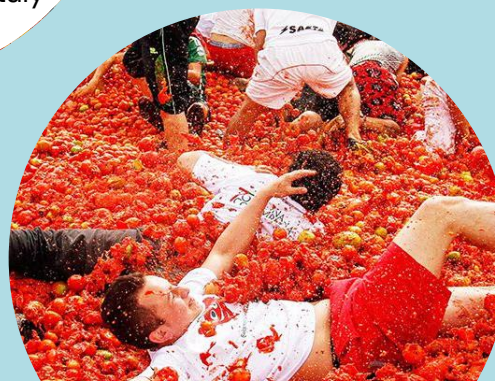
Food Festival,
New Delhi, India



PIZZAFEST in Naples, Italy



The National Cherry
Festival, Traverse City,
Michigan



La Tomatina,
Spain

FACTS & SNIPPETS



Fruit-flavored snacks shine because of car wax.

Food tastes different when you're flying.



Crackers have holes in them for a reason.

Cheese is the most stolen food in the world.



Honey is bee vomit.

Celery contains 16 calories per 100 g.



END ON A SWEET NOTE

**Liver Hormone
Regulates Sweet intake**

**FGF21 hormone secreted in the
liver regulates sweet craving**

**People who dislike sweets have
50% more FGF21 hormone**



Indian sweets are essential to any festive occasion, symbolizing joy, auspiciousness, and abundance. No celebration is truly complete without them.

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